

THAT WHICH IS CLAIMED:

1. A missile comprising:  
a fuselage member;  
an engine carried by the fuselage member and capable of thrusting the missile at transonic speed during flight;  
a wing actuator carried by the fuselage member; and  
a wing member pivotally connected to the fuselage member, wherein the wing member is pivotable by the wing actuator from a position substantially aligned with the fuselage member to a predetermined sweep angle.
2. A missile according to Claim 1, wherein the wing member has an aspect ratio of less than about 7.0.
3. A missile according to Claim 1, wherein the wing member is pivotally mounted to a lower surface of the fuselage member.
4. A missile according to Claim 1, wherein the wing member is pivotally mounted to an upper surface of the fuselage member.
5. A missile according to Claim 1, wherein the wing member is pivoted to a sweep angle of approximately 30 to 40 degrees such that one end of the wing extends generally in the direction of flight and an opposite end generally trails behind.
6. A missile according to Claim 1, wherein the wing member is pivotally attached to the fuselage member proximate to the midpoint of the wing member.
7. A missile according to Claim 1, wherein the wing member is pivotally attached to the fuselage member proximate to a one-quarter chord of the wing member.
8. A missile according to Claim 1, wherein the fuselage member has a diameter of less than about 7 inches.

9. A missile according to Claim 1, wherein the missile may thrust to transonic speeds of at least about Mach 0.9.
10. A missile according to Claim 1, wherein the missile may thrust to and maintain transonic speeds for at least 30 minutes during flight.
11. A missile according to Claim 1, further comprising a restraint attached to the fuselage and positioned proximate to each end of the wing member such that when the wing member is substantially aligned with the fuselage member, the wing member is substantially free from vibration.
12. A missile according to Claim 1, further comprising an antenna positioned within, and substantially along, an entire length of the wing member.
13. A missile according to Claim 1, wherein the wing actuator comprises a wound, spring-loaded actuator.
14. A missile according to Claim 1, wherein the wing actuator comprises an electronic actuator that may vary the sweep angles during flight.
15. A missile according to Claim 1, further comprising fins pivotally attached and proximate to a trailing end of the fuselage member.
16. A missile system comprising:  
an aircraft; and  
a missile releasably attached to the aircraft, the missile comprising:  
a fuselage member;  
an engine carried by the fuselage member and capable of thrusting the missile to transonic speed during flight;  
a wing actuator carried by the fuselage member; and

a wing member pivotally connected to the fuselage member, wherein the wing member is pivotable by the wing actuator from a position substantially aligned with the fuselage member to a predetermined sweep angle.

17. A missile according to Claim 16, wherein the wing member has an aspect ratio of less than about 7.0.

18. A missile system according to Claim 16, wherein the wing member is pivotally mounted to a lower surface of the fuselage member.

19. A missile system according to Claim 16, wherein the wing member is pivotally mounted to an upper surface of the fuselage member.

20. A missile system according to Claim 16, wherein the wing member has a sweep angle of approximately 30 to 40 degrees such that one end of the wing extends generally in the direction of flight and an opposite end generally trails behind.

21. A missile system according to Claim 16, wherein the missile may thrust to transonic speeds of at least about Mach 0.9.

22. A missile system according to Claim 16, wherein the missile may thrust to and maintain transonic speeds for at least 30 minutes.

23. A method of launching a missile comprising the steps of:  
mounting a missile to an aircraft such that the missile is releasably attached, wherein the missile comprises a fuselage member;  
releasing the missile from the aircraft, wherein the missile further comprises a wing member substantially aligned with the fuselage member;  
thrusting the missile to transonic speed; and  
pivoting the wing member to a swept position such that the wing member has a swept position during at least a portion of travel of the missile at transonic speeds.

24. The method according to Claim 23, wherein pivoting includes pivoting the wing member to a sweep angle of approximately 30 to 40 degrees such that one end of the wing extends generally in the direction of flight and an opposite end generally trails behind.

25. The method according to Claim 23, wherein thrusting includes thrusting the missile to transonic speeds of at least about Mach 0.9.

26. The method according to Claim 23, wherein thrusting includes thrusting the missile such that transonic speeds are maintained for at least 30 minutes.

27. The method according to Claim 23, further comprising providing a signal from an antenna positioned within, and substantially along, an entire length of the wing member such that the antenna may can transmit or receive a low band radio signal.

28. The method according to Claim 23, further comprising releasing restraining pins such that fins pivotally attached and proximate to a trailing end of the fuselage are free to pivot during flight.